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Reclamation — Meeting Tomorrow's Challenges

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Reclamation—
Meeting Tomorrow's Challenges

Roosevelt Dam, Arizona

The Bureau of Reclamation is an agency with a proud past, looking ahead to a future filled with challenge. For more than 85 years, the Bureau has been recognized as one of the world's premier water resource development agencies. It has met the rigorous tests of time, changing public values, and emerging technologies. It has confronted and conquered major challenges testing the skills and capabilities of its engineers, managers, and planners. Reclamation has stamped a lasting imprint of achievement on the geography and economy of the American West.

Today, Reclamation stands at the crossroads. The arid West essentially has been reclaimed. The major rivers have been harnessed and facilities are in place or are being completed to meet the most pressing current water demands and those of the immediate future.

A Proud Past

The Bureau was created by Congress in 1902 to reclaim the arid lands of the West through irrigation and to stimulate the settlement and economic development of the region. It harnessed streams and rivers to create storage reservoirs and built transport systems to ensure delivery of a secure, seasonal, water supply to bring reclaimed lands into full production.

As irrigation opened the way to agricultural prosperity, the West grew in population and economic stability, creating new opportunities for water use. The Bureau's role and expertise quickly expanded to satisfy increasing demands for municipal and industrial water supplies, hydroelectric power, salinity control, improved water quality, recreation, flood control, and environmental enhancement. The original single-purpose mandate of the Congress was expanded as Reclamation developed multi-purpose projects.

Early irrigation, Wyoming, 1909

Roosevelt Dam under construction, 1909

Reclamation Today

Since the program began in 1902, the federal government has invested approximately $8.7 billion in completed Reclamation facilities. About 80 percent of this total investment is reimbursable to the federal treasury. Across the West, the Bureau of Reclamation annually supplies over 10,000 billion gallons of water to more than 23 million people for municipal, industrial, and agricultural use. Project water is delivered to almost 10 million acres of farmland to produce crops valued at $7.5 billion annually.

The Bureau's 52 non-polluting hydroelectric powerplants supply electricity to 17 million persons, equivalent to the combined populations of New York City, Chicago, Dallas, San Francisco, and Washington, D.C. The sale of that power returns $675 million annually to the federal treasury.

Flood control benefits provided by Bureau projects total an estimated $94 million each year. Recreational use of project facilities accounts for more than 50 million visitor days each year. Water and power from Reclamation projects have accelerated the growth of population and industry in thousands of western communities.

Sailing on Hoover Dam's Lake Mead, Nevada

Looking Ahead

Audubon Lake, North Dakota

In recent years, the Bureau's primary role as the developer of large, federally-financed agricultural projects has declined. No major new reclamation project has been authorized by Congress since 1968. Environmental concerns, a farm economy no longer capable of sustaining the burden of increasingly costly projects, a revised public perception of Reclamation's mission, and budgetary constraints at all levels of government have combined to make major agricultural water and power projects increasingly difficult to justify.

By the mid-1990's, construction of federally funded water and power projects will no longer be a major priority in Bureau activities. Smaller water resource development opportunities in which Reclamation may participate still exist. But the key to the future lies in the Bureau's ability to make an orderly transition from a major construction agency to an organization based primarily on resource management.

A New Beginning

Reclamation's future role will entail a shift in emphasis — an acknowledgement that past goals have been met even as new challenges are emerging. Reclamation will focus upon efficiency in total resource management and more effective use of existing facilities.

Non-structural means of meeting future water and power needs will be emphasized. Although construction will continue to occur whenever it is appropriate, this phase of the program will decline in importance, although it will remain an essential part of the Bureau's resource management operations.

Operation and maintenance of existing facilities will assume new stature as improved operations and orderly upgrading of productive capability will become the integral means of economically meeting demands for increased and improved water and power resources.

By the year 2000, the Bureau's order of priorities will likely be:

1. operation and maintenance;
2. water quality and environmental enhancement;
3. groundwater management;
4. total system optimization; and
5. dam safety programs.

The Bureau's responsibility to plan, design, construct, operate, and maintain economically and environmentally acceptable resource development projects will continue. To provide water more efficiently, Reclamation will work with state and local entities to establish policies governing the use of water made available through planned conservation efforts.
The Bureau will seek to resolve institutional and legal constraints to water conservation; improve operations and upgrade facilities to create additional usable water supplies from existing sources, and selectively transfer operation and maintenance responsibilities to local project beneficiaries.

The Winds of Change

Change through orderly evolution is the key to the future of the Bureau of Reclamation. Such an evolution is now taking place. Reclamation already has launched an aggressive effort to emphasize its operations and maintenance program. The agency has proposed new water management planning studies, and it is testing new technology in the construction program.

To continue its past record of service to the public, Reclamation must provide, manage, and improve future water and power operations in the West. The areas in which the Bureau must focus its attention are many and varied. They include such programs as:

Construction

In the future, the primary emphasis will no longer be construction of big dams and large projects, but the Bureau has by no means reached the end of its long-standing construction program. After the mid-1990's, the level of construction is expected to decline as major projects now authorized and underway are brought to completion.

There will be some new construction projects in the future, although they are anticipated to be smaller, oriented to resolving water problems at local levels, and largely financed from non-federal sources. The Safety of Dams program will continue to hold high priority and construction under the program will be oriented toward correcting deficiencies in existing structures rather than building new projects.

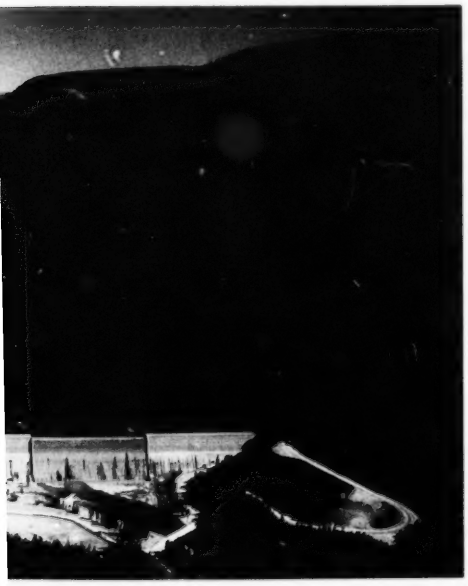
San Luis Dam, California

Upper Stillwater Dam, Utah

Operation and Maintenance

Bureau of Reclamation water and power systems on the average are 30 to 40 years old. Some are becoming obsolete. Many require substantial annual maintenance and others are increasingly inefficient in providing both water quantity and quality. There is a critical need to renovate, rehabilitate, and, in some cases, rebuild these facilities.

A cost-effective and adequately funded operations and maintenance program is Reclamation's top priority and will continue to be so in the future based on the principle that (1) federal investments already made should be protected, and (2) maintenance of existing facilities must be given precedence over construction of new projects. The Bureau has initiated a multi-year program to eliminate a substantial backlog of identified operations and maintenance deficiencies.

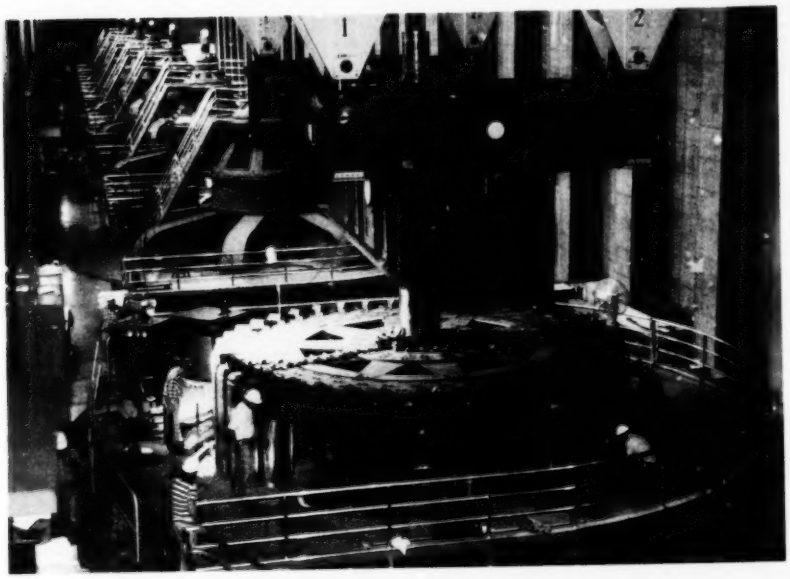


Fishing below Pathfinder Dam, Wyoming

Water Conservation

A portion of the growing need for added water and power can economically be satisfied by conserving water supplied through facilities already in use. Once saved, the water created through operational conservation efficiencies can be conveyed to those who can put it to the most beneficial use.

To make more efficient use of available water, it may be necessary to alter traditional approaches to meet the changing realities of the future. Part of the Bureau's new mission is to assist water users and



Replacing rotor, Hoover Dam powerplant

development agencies in undertaking a comprehensive review of state and federal water laws and policies, some of which may be obsolete.

The changes needed cannot and should not come about by federal mandate. They must evolve through cooperative effort and a mutual recognition of changing realities. While new laws and policies may be needed, and their identification will be key objectives of the new mission, changes sought will in no way compromise existing commitments or past contractual obligations.

Shasta Dam, California

Water Quality and Environmental Enhancement

Reclamation will accelerate its programs to improve water quality, eliminate environmental pollution, and protect Western water supplies from other threats of pollution. Other related programs, such as fish and wildlife enhancement, reduction of salinity and other pollutants in streams and reservoirs, agricultural drainage control, and protection against contamination of underground and surface water sources will be emphasized.

Power

Bureau of Reclamation hydroelectric generating facilities can be operated more efficiently and economically by automating powerplants, installing computer systems that will enhance power generation and decrease costs in multi-unit plants, and uprating generators to provide more output. Preventive maintenance at power facilities will be a high priority. Reclamation will continue to seek non-federal participation in the development of hydropower at federal facilities.

System Efficiency and Joint Use

In many areas, the Bureau, other federal agencies, and non-federal political and private entities operate facilities in the same river basins or systems. Reclamation studies indicate that operating water and power facilities under unified or coordinated management regimes can increase the supply of available water in a system by as much as 50 percent.

Groundwater Management

As the demand for high quality water grows, careful management of groundwater resources becomes increasingly more important. Reclamation recognizes and strongly supports the principle that the primary responsibility for allocation, management, and protection of groundwater resources rests with the states.

The continuing goal of the Bureau will be to work with state, regional, and local entities in support of this principle. The Bureau is working with the 17 western states, the U.S. Geological Survey, and the Environmental Protection Agency in

Tunnel inspection, Canyon Ferry Dam, Montana

planning, constructing, and evaluating groundwater recharge and replenishment demonstration sites throughout the West.

The Bureau has several programs focused on coordinating the use of surface water and groundwater, desalinization and improvement of water quality, control of high water tables through drainage, and technical assistance to other governmental agencies in their groundwater activities.

Growing demands for additional water supplies will result in a higher priority for development of groundwater management plans in the 1990's. The Bureau will have a unique opportunity to employ its proven expertise and capabilities in assisting other entities with the development and implementation of these plans.

Dam Safety

Safety of dams will continue to be one of Reclamation's top priority programs during the next decade. Growing demands for additional supplies of water and power have increased the pressure for full capacity use of aging Bureau dams. In 1986, Interior created a Dam Safety Task Force to develop technical safety ratings for all dams constructed by the Department of the Interior.

The Department revises the ratings annually, based on the latest available technical information for each dam. That information enables Reclamation to establish priorities for work to be done, and provides a schedule for taking corrective action. Funding and construction programs for dam safety will decrease over the next ten years as work is completed on dams with the highest priorities of need.

Planning

Reclamation programs in the future will depend largely upon changes of emphasis being made by Bureau Planners today. Increasing priority will be given to planning programs that emphasize effective resource management and better use of existing facilities rather than focus primarily on new construction.

Before exploring structural solutions, planning studies generally will explore a range of other alternatives. For the immediate future, alternatives fall into three major categories: (1) full basin or river system utilization, (2) basin-wide management of resources and facilities, and (3) the most beneficial use of water saved through conservation.

New studies will explore a broad range of potential solutions — conjunctive groundwater use with sur-

face water supply, augmentation through weather modification, improved water quality, cooperative management, water transfers and marketing procedures, toxic waste disposal, agricultural drainage control, and broader environmental concerns.

Water users affected by such studies span a wide spectrum — municipalities, industrial concerns, power districts, water districts, wetlands, recreation, and agriculture. Planning in the future will enlist the active involvement of states, local political subdivisions, water districts, and other interested parties.

Reclamation's expanding mission also will include new emphasis on sharing planning, engineering, and construction management expertise with other agencies, departments, or governments on a cost-reimbursable basis. Already Reclamation is serving the Department of the Interior in an expanded technical advisory capacity. To prevent or eliminate unneccessary and costly duplication of technical expertise, the Bureau will, when appropriate, provide technical services to other government agencies, such as the Environmental Protection Agency in water-related toxic waste cleanup programs.

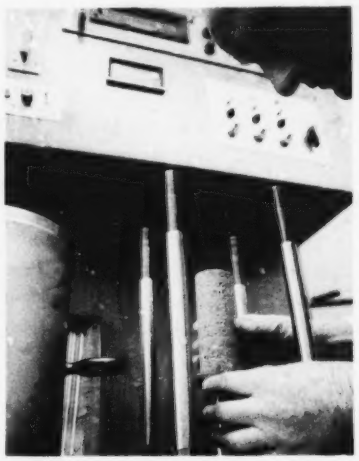
Reclamation has the skills and capabilities, tested and proven in more than 60 countries, to continue and expand its efforts to assist less developed nations to utilize their water and power resources. These projects, financed by the host country, the World Bank, Regional Development Banks, or the United States Agency for International Development make important contributions to the foreign policy of the United States. Frequently, these programs provide access to and help develop and maintain new markets for the sale of products and services by the U.S. private sector.

The need for an effective hazardous waste management program has

long been recognized by federal officials, the public, and the Congress. That need is reflected in recent legislation which directs several Department of the Interior agencies, including Reclamation, to pursue various cleanup and remedial activities. In the coming decade, Reclamation's role in this area will expand.

Reclamation has had extensive experience with the construction, contracting, management, and operation of complex facilities. It has technical expertise in both the engineering sciences and the vital support areas of economics, environment, and management. Reclamation will make this expertise available to other federal agencies, state and local entities, and the private sector to achieve efficiencies in water and power developments. Many of the technical advances made in the water resource field came about through Reclamation's research programs. Given that success, the Bureau will continue to make research a high priority, particularly in the areas of water quality and hazardous waste cleanup. Presently, funding to support applied research comes under the construction program. In years to come, reduced construction budgets may require that funds for research programs must come from nonfederal sources.

Another significant change in Reclamation policy may be the forging of new partnerships with the private sector to permit controlled private development of land resources associated with both future and existing Bureau projects. The present policy of administration of these land resources by another federal, state, or local entity focuses primarily on establishment of public recreational uses and does not always result in the best use of either recreational or cultural potential of land under Reclamation jurisdiction. A policy that would permit some private sector participation could enhance resource development for both private and public users and also provide a source for financing cultural and recreational projects.



Concrete core testing, Denver lab

As the Nation's principal conservation agency, the Department of the Interior has responsibility for most of our nationally-owned public lands and natural and cultural resources. This includes fostering wise use of our land and water resources, protecting our fish and wildlife, preserving the environmental and cultural values of our national parks and historical places, and providing for the enjoyment of life through outdoor recreation. The Department assesses our energy and mineral resources and works to assure that their development is in the best interests of all our people. The Department also promotes the goals of the Take Pride in America campaign by encouraging stewardship and citizen responsibility for the public lands and promoting citizen participation in their care. The Department also has a major responsibility for American Indian reservation communities and for people who live in Island Territories under U.S. Administration.

U.S. DEPARTMENT OF THE INTERIOR
Bureau of Reclamation